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L O G I C.

B Y

QUESTION

A N D

A N S W E R.

FOR THE USE OF

PORTSEA-ACADEMY.

K



P O R T S M O U T H :

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CHAP. I.

WHAT is *Logic*?

The art of employing *reason* justly, in inquiries after *truth*, and in communicating it to others.

What is *Reason*?

The glory of *human nature*, the intellectual powers of *man*.

Wherefore do you call *reason* the glory of human nature?

Because it raiseth man above his fellow-creatures the brutes, on this terrestrial globe, the earth.

A

From

From whence is *reason* derived?

It is the common *gift of God to mankind.*

Are all men equally favoured with it?

No. Some are blessed with it in a higher degree than others.

What is the *design* of *Logic*?

To teach us the right use of our reason, and the improvement of it in ourselves and others.

What are the effects of *reason* improv'd?

The humanizing mankind, and raising the *learned* by *acquired improvements* as superior in *wisdom* and *knowledge*, to the savages of Africa, as those savages are by nature to the beasts of the field.

It also enables us to distinguish *good* from *evil*, and *truth* from *falsehood*.

Of what advantage is the *pursuit* and *acquisition of truth*?

By it we become acquainted with the nature of things, their various relations to each other: Our *duty to GOD*, and our *fellow-creatures*: By it we understand *natural religion*, and learn to confirm our faith in *divine revelation*, as well as to understand what is *revealed*.

Is it necessary our *reason* should have assistance in the *use* of it?

Most certainly. The first proof of which is, the depth and difficulty of many truths.

II. The weakness of our reason.

III. The disguise and false colours in which many things appear to us in this present imperfect state.

IV. The deception of our *senses*, our *imagination*s, *passions*, and *appetites*.

V.

V. The *authority of men*,

VI. *Education and custom*.

VII. Forming *judgments* before our reason is mature.

Lastly. Our *original defection* from GOD, being in a *fallen state*.

What is to be understood by *disguise*, and *false colours*?

Things that appear to be what in reality they are not.

Illustrate this with a few examples?

The *sun* appears to be flat : The *moon* appears as large as the *sun* : The *rainbow* appears to be a substantial arch in the *sky* : Those are the reverse. Again, *knavery* puts on the face of *honesty* : *hypocrisy* and *superstition* wear the vizard of *piety* : *deceit* often appears as *truth* ; and *evil* as *goodness*.

What

What is good judgment and prudence called, that any man exerts, who has not the advantage of learning?

Natural Logic.

What is *artificial Logic*?

Reason improved by the principal operations of the mind.

What are the *principal operations of the mind*?

Four, namely, 1st. *perception, conception, or apprehension.*

2d. *Judgment.*

3d. *Reasoning, or, Argumentation.*

4th. *Disposition.*]

What is *Conception*?

The simple contemplation of things offered to our minds, as a *horse*, a *tree*, *high*,

high, low, swift, slow, animal, motion, matter, mind, life, death, &c. The result of our conception, is called an idea.

What is *Judgment* ?

That operation of the mind, whereby we join two or more ideas together, by one affirmation or negation. As, *this tree is high : That horse is not swift : The mind of man is a thinking Being : GOD is just :* Which sentences are the effect of judgment, and are called *propositions*.

What is *Reasoning* ?

That operation of the mind, by which we infer one proposition, from two or more propositions premised. Or draw a conclusion, which before was unknown, or doubtful, from some propositions, which are more known and evident.

Give some Examples ?

We judge *matter cannot think*, and that *the mind of man doth think*, we then infer

fer and conclude, that *therefore the mind of man is not matter*. Again, we judge that a just governor will make a difference between the evil and the good; we judge also that GOD is a just governor; and from thence we conclude, that GOD will make a difference between the evil and the good. These *inferences or conclusions* are the effects of reasoning, and the three propositions taken together, are called, a *syllogism*, or *argument*.

What is *Disposition*?

That operation of the mind, by which we range our thoughts in such order, as is best for our own and others conception and memory. The effect of this operation is called *method*. This *description of the four operations of the mind and their effects in this order*, is an example of *method*.

How many parts is *Logic* divided into?

Into four parts; namely, these four operations of the mind.

C H A P.



CHAP. II.

IS there any difference in the nature of *conception*, and *perception*?

They are often used promiscuously, tho' there is a *distinction* in their *definitions*.

What is that distinction?

Conception, is the forming an *idea* of an *object*, whether present or absent.

Perception, is the consciousness of an *object* when present.

What is an *Idea*?

The

The immediate *object* of the *understanding*. *Viz.* A representation of a thing in the mind, that we have seen, felt, heard, or been conscious of.

Is the outward object, or thing which is perceived, namely, a horse, a man, &c. called the *idea*?

No. It is the thing as it exists in the mind by way of representation, that is called the *idea*. For a horse, a man, &c. are the outward *archetypes*, or *patterns* of our *ideas*.

Is the very perception, or sense and feeling of hunger, or cold, &c. called the *idea*?

No. It is the existence of the thing conceived in the mind, that is called the *idea*. For our sensations of hunger, cold, &c. are inward *archetypes*, or *patterns* of our *ideas*.

Explain your *Meaning*?

To

To see a horse, or to feel cold, is one thing; to think of, and converse about a horse, or cold, is another. And the last-mentioned is called an idea.

What are those *ideas* called that represent *bodies*?

Images, or ideas of sensation.

What are those inward *representations* we have of *spirit, love, hatred, cause, effect, &c.* called?

Mental ideas, or ideas of reflection.

What is every *object* of our *idea* called?

A *Theme*; whether it be a *Being* or *Not-Being*. For *Not-Being* may be proposed to the thought, as well as that which has a real *Being*.

How is a *Being* to be considered?

As *possible*, or as *actual*.

When is it considered as *possible*?

When

(II)

When it is said to have an *essence* or *nature*.

Illustrate this ?

Such were *all things before the Creation*.

When is a *Being* considered as actual ?

When it is said to have an *existence* also.

Give an Illustration ?

Such are *all things which are created*, and GOD himself the Creator.

What is to be understood by *Essence* ?

The very *nature* of any *Being*, whether it be actually existing or not.

Illustrate this ?

A *rose in winter* has an *essence*, in *summer* it has *existence* also.

Does any *Being* include existence in the very

very *essence* of it ?

Only one, and that is GOD.

Is the *actual existence* of every other Being distinct from its *essence* ?

Yes. For it may *be*, or may *not be*, as God pleases.

Is not a *Being* to be considered in another manner ?

Yes. As a *substance*, or a *mode* or *manner* of *Being*.

When is a *Being* called a *substance* ?

When it subsists in and by itself.

When is a *Being* called a *mode* or *manner* of *Being* ?

When it subsists in and by another.

Give an Illustration ?

A *body* is the substance or subject, its *shape* is the mode.

How are *substances* divided ?

Into *animate*, and *inanimate*.

How are animated substances divided ?

Into *animal* and *vegetable*.

What are *animal substances* ?

Men, beasts, birds, fishes, and insects.

What are *vegetable substances* ?

Plants, herbs, and trees.

What are the *substances* called *inanimate* ?

Earth, stone, air, water, &c.

What are the modes of the *body* ?

Motion, shape, quantity, and weight.

What

What are the modes of the mind ?

*Knowledge, wit, folly, love, doubting,
judging, &c.*



C H A P. III.

WHAT is the first division of *modes*?

Into *essential* and *accidental*.

What is an *essential mode* or *attribute*,
of the subject wherein it is?

Roundness in a *bowl*, *hardness* in a *stone*,
softness in *water*, *vital motion* in an *ani-*
mal, *thinking* in a *spirit*, &c.

Are not *flesh* and *bones* an *animal*?

Yes, so long as they have life and inward
motion; but if all motion be intirely
B gone,

gone, they become a carcase.

Are there any distinctions of an *essential mode*?

Yes. *primary* and *secondary*.

What is a *primary essential mode*?

The chief thing that constitutes a Being, and distinguishes it from any other Being.

Give an Example?

Roundness is the primary essential mode, or difference of a *bowl*.

What is a *secondary essential mode*?

Any attribute of a thing, which is not of primary consideration: This is called a *property*.

Give an Example?

Volubility, or *aptness* to roll, is the property of a *bowl*.

What

What is an *accidental Mode*?

That which is not necessary to the Being of a thing: It is also called *accident*.

Give an Example?

Blackness or *whiteness*, *motion* or *rest*, are the *accidents* of a *bowl*; for these may be all changed, and the body remain a *bowl*.

What is the second division of *Modes*?

Into *absolute*, and *relative*.

What is an *absolute Mode*?

That which belongs to its subject, without respect to any other Beings whatsoever.

Give an Example?

Roundness and *smoothness* are the *absolute* modes of a *bowl*.

What is a *relative Mode*?

It is derived from the regard that one Being has to others: Or by comparison.

Give an Example?

Greatness and *smallness*: For a bowl of twelve inches diameter is *very great*, compared with one of but two inches diameter.

What is the third division of *Modes*?

Into *intrinsic* and *extrinsic*.

What are *intrinsic Modes*?

They are conceived to be in the subject or substance.

Illustrate this?

A globe is *round*, *rolling*, or at *rest*.
A man is *tall*, *learned*, &c.

What are *extrinsic Modes*?

They

They arise from something that is not in the subject or substance.

Illustrate this ?

*This globe lies within a yard of the post.
This man is beloved or hated. **

What are *Predicaments* ?

Ten *ranks* or *orders* of Beings ; or *substances* ranged according to their *natures*.

B 3

Name

* There are many other divisions of modes, and modes of other modes, for which the Pupils are referred to Dr. WATTS's LOGIC, from whence the preceding chapters are chiefly taken. The Writer hereof does not think he can make any improvement on that excellent *Author's Works*: He has only taken the liberty of extracting therefrom, as an introduction thereto, for his Pupils. This apology the Compiler thought absolutely necessary for him to make, that his *intention* might not be mistaken for *vanity*, or *presumption*.

Name them ?

Substance, accident, quantity, quality, relation, action, passion, the situation of bodies as to place, their duration as to time, and their habit or external appearance.



C H A P.



CHAP. IV.

CAN *Not-Being* be considered with regard to *substance* and *mode*?

Yes; as excluding all *substance*, and then all *modes* are also excluded.

How has this *pure nibility*, or *mere nothing*, relation to *substance*?

In a *vulgar* and *philosophical* sense.

Illustrate this?

We say, *there is nothing in the cup*, in
B 4 a

a vulgar sense, when we mean there is *no liquor in it* : But we cannot say so in a philosophical sense, while there is *air* in it, or *rays of light* therein.

How has *Not-Being* relation to *Modes*?

As a *negation*, and as a *privation*.

How as a *Negation*?

When we speak of the absence of what does not naturally belong to the substance; or what has no necessity to be present with it.

Illustrate this?

1st. *A stone is inanimate or blind*, that is, it has no *life*, nor *sight*.

2d. *A Cobler is unlearned*.

How has *Not-Being* relation to *mode*, as a *privation*.

When we speak of the absence of
what

what does naturally belong to the subject, or ought to be present with it.

Illustrate this ?

1st. A *man* is *deaf*, or *blind*.

2d. A *Divine* is *unlearned*.

CHAP. V.

HOW may *ideas* be divided ?

Into four sections, their *origin*, their *nature*, their *objects*, and their *qualities*.

SECT. I.

How may our *ideas* be divided, with regard to their *origin* ?

Into *sensible*, *spiritual*, and *abstracted*.

From

From what are our *sensible* or *corporeal* ideas derived?

From our senses. Such are the ideas we have of *colours, sounds, figures, shapes, &c.*

How are *spiritual* or *intellectual* ideas gained?

By observing what is transacted in our own minds. Such are the ideas of *thought, assent, reason, love, fear, &c.*

How are *abstracted* ideas framed?

By withdrawing some parts of an idea from other parts of it.

S E C T. II.

How may our *ideas* be divided when considered in their nature?

Into *simple* and *complex*.

What is a *simple* Idea?

It

It is one uniform idea which cannot be divided, or distinguished by the mind of man, into two or more ideas. Such are many of our *sensations*, as the idea of *sweet, bitter, cold, white, heat, hard, motion, &c.* Such are also many of our intellectual ideas, as of *thought, will, knowledge, &c.*

What is a *complex Idea* ?

Such as can be divided by the mind, into two or more simple ideas. As a *square, triangle, reading, truth, a pen, a man, a swift horse, &c.*

Are *complex ideas* considered as *single, and distinct Beings* ?

Yes; though they may be made up of several simple ideas. As a *body, a spirit, a house, a flower, &c.*

When several of these ideas of a different kind are joined together; what are they called ?

Compound

Compound Ideas.

Illustrate this ?

Man is compounded of *body* and *spirit*.

Harmony is a compound idea made up of different sounds united.

When many of these ideas of the *same kind* are united in one name, or under one view : What is it then called ?

A collective Idea.

Illustrate this ?

An *army* is a collection of men. A *dictionary* is a collection of words. A *forest* a collection of trees. A *nosegay* a collection of flowers. A *week* a collection of days, &c.

S E C T III.

How may *ideas* be divided according to their objects ?

Into

Into *particular* or *universal*.

What is a *particular Idea*?

That which represents one thing only.

Note. The *object* of any particular idea, as well as the *idea* itself, is sometimes called an individual. Thus *Peter* is an individual man. So this *book*, one *horse*, &c. are individuals.

What is an *universal Idea*?

That which represents a common nature agreeing to several particular things. Such as a *horse*, a *man*, a *book*; because they agree to all *horses*, *men*, or *books*.

Are there not five sorts of words called *predicables*, which express five sorts of *universal ideas*?

Yes.

Name them?

Genus, *species*, *difference*, *property*, *accident*.
What

What is *Genus*?

One common nature agreeing to several other common natures.

Illustrate this?

Animal is a *genus*, or a general idea; because it agrees to *man*, *horse*, &c.

What is *Species*?

One common nature agreeing to several individual Beings. *Viz.* as their whole essence.

Illustrate this?

Man is a *species*, or special idea; because it agrees to *John*, *Thomas*, &c. So *horse* is a *species*, because it agrees to *ball*, *trott*, *whitefoot*, &c.

What is *Difference*?

That predicable which is their distinguishing part.

Illustrate

Illustrate this?

The animal *man*, is *rational*; which distinguishes him from the animal *horse*, who has not *reason*.

What is the predicable called *property*?

Such as is necessarily joined to their essence, as *risible*, *irascible*. &c.

What mean you by the word *Accident*?

That predicable, as is joined contingently to their essence; as *white*, *black*, &c.

S E C T. IV.

How may *ideas* be divided with regard to their *qualities*?

Into four divisions. Namely,

1st. They are either *clear* and *distinct*, or *obscure* and *confused*.

2d. They are *vulgar* or *learned*.

3d,

3d. They are *perfect*, or *imperfect*; otherwise called *adequate*, or *inadequate*.

4th. They are *true* or *false*.

What is a *clear* and *distinct* *Idea*?

That which represents the object of the mind with such full evidence and energy, that distinguishes it from all other objects.

Illustrate this?

Suppose yourself at sea, look up at the *sky*, and down at the *sea*, you have a *clear* and *distinct* *idea* of each.

What is an *obscure* and *confused* *Idea*?

That which represents the idea faintly, imperfectly, mingled with other ideas, or not sufficiently distinguished from other things.

Illustrate this?

When at sea, in misty weather, look
toward

toward the horizon, at the sky and the sea, and your ideas of both, are but *obscure* and *confused*. *

What is a *vulgar Idea* ?

That which represents the most obvious and sensible appearances that are contained in the object of them.

What is a *learned Idea* ?

That which penetrates into the nature, properties, reasons, causes, and effects of things.

Exemplify these ?

It is a *vulgar idea* which we have of a *watch* or *clock*, when we conceive of it as an instrument, made to shew us the hour of the day : But it is a *learned idea* which the *Watch-maker* has of it, who knows all
C the

* For more illustrations, you are referred to Dr. WATTS.

the several parts of it, the spring, the balance, the chain, the wheels, their axles, &c. with the various connections and adjustments of each part, whence the exact and uniform motion is derived, which points to the minute or the hour.

What is a *perfect*, or *adequate Idea*?

That which perfectly represents its archetype or object.

What is an *imperfect* or *inadequate Idea*?

That which has but a partial, or incomplete representation of its archetype or object.

Note 1. All our *simple ideas* are *adequate*.

2. The *ideas* of various *figures*, or *colours*, are *perfect*; as a *triangle*, a *square*, &c. *white*, *black*, &c.

3. When we have a perfect idea of any thing in all its *parts*, it is called a *complete*

complete idea: When in all its *properties*, it is called a *comprehensive idea*.

4. When we have but an *inadequate* and *imperfect* idea, we are only said to *apprehend* it. Therefore we use the term *apprehension*, when we speak of our knowledge of GOD, who can never be *comprehended* by his creatures.

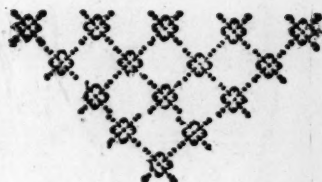
5. Though there are a multitude of ideas which may be called *perfect*, or *adequate* in a *vulgar sense*; yet there are scarce any ideas which are *adequate*, *comprehensive*, and *complete* in a *philosophical sense*.

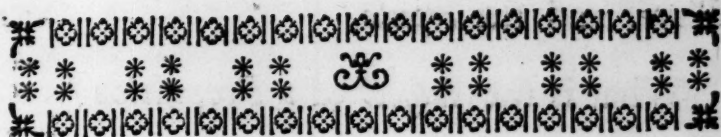
When are our ideas said to be *true* or *false*?

If the idea be conformable to the object or archetype of it, it is a *true idea*; if not, it is a *false idea*.

Note. You are referred to *Dr. Watts*, for the *several divisions* of words, with
C 2 the

the *advantage* and *danger* of them. For,
general *directions* relating to *ideas*. And,
for *special rules* to direct your *conception*
of *things*.





C H A P. VI.

W H A T is a *Proposition* ?

The effect of *judgment*. *

How many things are there in the nature, and constitution of a *proposition* ?

C 3

Three

* See at page 6, the question.

“ What is *judgment* ? &c.” Note. The word *terms*, is used in describing a *proposition*, as well as the word *ideas*.

Three. Namely, the *subject*, the *predicate*, and the *copula*.

What is the *subject* of a *Proposition*?

That concerning which something is affirmed or denied.

What is the *Predicate*?

That which is affirmed, or denied of the subject.

What is the *Copula*?

The *form* of a proposition : It represents the act of the mind, affirming or denying, and is expressed by the words, *am*, *art*, *is*, *are*, &c. or *am not*, *art not*, *is not*, *are not*, &c.*

Illustrate the foregoing?

Robert is a good boy.

In

* There is no pure *logical Verb* except *is*, yet some are compounded of *is*, and a participle ; and others are expressed by such words as *no*, *none*, *not*, *never*, &c.

In this proposition, *Robert* is the subject, *a good boy* is the predicate, and *is* the copula.

Again, *A plain triangle* is formed by three right lines. Here, *A plain triangle* is the subject, *formed by three right lines*, the predicate, and *is*, the copula.

Bad men are not happy. Here, *bad men* is the subject, *happy* the predicate, and *are not* the copula.

Give an example of a proposition, whose copula is compounded of *is* and a participle?

Peter eats pudding. Here *eats* the copula, signifies *is eating*.

When each part of a proposition is not expressed distinctly in words, are they all to be understood?

Yes. As for example,

Socrates disputed, is a complete proposition,

position, for it signifies *Socrates was disputing*.

So *I write*, signifies *I am writing*. *I can write*, signifies *I am able to write*.

What do the words *am*, *art*, *is*, &c. signify, when they are used alone without any other predicate?

They signify both the *act of the mind judging*, which includes the *copula*, and also *actual existence*, which is the *predicate* of the proposition.

Illustrate this ?

London is, signifies *London is existent* : *There are some unlearned boys*, that is, *some unlearned boys are existent* : *Troy is no more*, signifies *Troy has no Being* : Or *Troy is not existent*.

Are the subject and predicate, always to be known and distinguished by the placing of the words in the sentence ?

Not

Not always.

How then are they to be known?

By reflecting on the sense of the words, and on the mind and design of the speaker or writer.

Illustrate this?

In AFRICA, there are many lions; that is many lions are existent in AFRICA: Here *many lions* is the subject, and *existent in AFRICA* is the predicate, and *are* is the copula.

It is proper for a philosopher to understand Geometry: Here the word *proper* is the predicate, and all the rest the subject, except *is* the copula. *

Are

* *Note.* The subject and predicate of a proposition ought always to be two different ideas, or two different terms; if they are the same, it is called an *identical proposition*, which is trifling; such as *a rule is a rule*, or *a good scholar is a good scholar*.

Are there not some propositions where-
in the *terms* of the subject and predicate
seem to be the same; yet convey to the
mind different *ideas*?

There are. And such cannot be called
purely identical or trifling propositions.

Give a few Examples?

1st. *Home is home*; that is, *home is a
pleasing place*.

2d. Socrates is Socrates *still*; that is,
the man Socrates is still a philosopher.

3d. *What I have written, I have
written*; that is, *what I wrote I still ap-
prove, and will not alter*.

In these propositions the term is *equivocal*,
for in the *predicate* it has a different idea
from what it has in the *subject*. *

C H A P.

* *Note.* There are some propositions wherein
the



CHAP. VII.

HOW may propositions be distributed?

Into various kinds, according to their *subject*, their *copula*, their *predicate*, their *nature* or *composition*, their *sense*, and their *evidence*.

SECT. I.

How

the *terms* of the subject and predicate differ, but the ideas are the same. *As, a globe is a round body. &c.*

How are propositions divided, according to their *subject*?

Into *universal* and *particular*. *

What is an *universal Proposition*?

That whose subject is taken according to the whole of its extension.

Viz. 1st. If the subject be a *genus*, it includes all its *species* or *kinds*.

2d. If the subject be a *species*, it includes all its *individuals*.

Illustrate these?

All animals die. No man can escape death. Every creature had a beginning.

What is a *particular proposition*?

That

* This is usually called a division arising from the quantity.

That whose subject is not taken according to the whole of its extension.

Illustrate this ?

Some animals can fly. Few men are truly wise. Some birds can whistle. Plato was a philosopher.

Note. This last may be called a *singular proposition*, as it's subject *Plato* is an *individual*. So, *the house on the hill is a pleasant dwelling*. &c.

As there are *singular propositions*, are there not *indefinite propositions* also ?

Most certainly ; when there is no note, either of *universality*, or *particularity*.

Illustrate this ?

A planet is ever changing its place.

Angels are noble creatures.

How

How do *universal propositions* denote their *universality*?

By a *metaphysical*, or *mathematical universality*; a *physical*, or *natural*; and a *moral universality*.

Illustrate the *metaphysical* or *mathematical*?

All spirits in their own nature are immortal. All circles have a center and circumference.

Illustrate the *physical* or *natural*?

All men use words to express their thoughts; yet dumb persons are excepted, for they cannot speak. All beasts have four feet; yet there may be monsters with five; or maimed, who have but three.

Illustrate the *moral Universality*?

All Hottentots are stupid creatures. All men are governed by affection rather than by reason.

Is

Is not an universal term sometimes taken *collectively*?

Yes.

Give some Examples?

All these apples will fill a bushel. All the rules of grammar overload the memory.

Is there not a *distributive universality* also?

Yes, by changing *all* into *every*, or into *one*.

Give some Examples?

Every man is a sinner. Christ healed every disease.

S E C T. II.

How is a proposition divided with regard to its *copula*?

Into *affirmative* and *negative*. †

What

called

† This is usually a division of propositions according to their *quality*.

What is an *affirmative proposition* ?

That, whose idea of the predicate is supposed to agree to the idea of the subject, and is joined to it by the word *is*, or *are*.

Give some Examples ?

A good boy is deserving of praise. All men are sinners.

What is a *negative Proposition* ?

Such, as its predicate is not supposed to agree with its subject, and is disjoined from it by the copula *is not*, or *are not*.

Give some Examples ?

Man is not innocent. Good boys are not neglectful of their learning.

Are there not some *terms*, or *words*, and *ideas*, concerning which, it is difficult to determine whether they are *negative* or *positive* ?

Yes ;

Yes ; such as, *Plato was no fool. Cæsar made no expedition to Muscovy. An oyster has no part like an eel. &c.*

If two negatives (in English) are joined in one sentence, do they not make an affirmative ?

Yes. As for example, *No man is not mortal* ; is the same as tho' you had said, *man is mortal.*

If two ideas are joined or disjoined in various forms, will they not afford several propositions ?

Yes ; and they may be distinguished according to their *quantity* and their *quality* into four, which are denoted by the letters A, E, I, O, Thus

A	}	denotes	{	An universal affirmative.
E				An universal negative.
I				A particular affirmative.
O	}			A particular negative.

Those letters are taken from the following

D

lowing

lowing old Latin rhimes.

*Afferit A, Negat E, verum generaliter
Ambæ.*

*Afferit I, Negat O, sed particulariter
Ambo.*

Exemplify this by the two ideas, a
vine, and a tree?

A Every vine is a tree.

E No vine is a tree.

I Some vine is a tree.

O Some vine is not a tree.

What are those propositions called that
differ both in quantity and quality?

Contradictory; as,

A Every vine is a tree.	} These can ne- ver be both true, or both false at the same time.
O No vine is a tree.	

Some Vine is not a Tree.

If

If two universals differ in quality, what are they called ?

Contraries ; as,

A <i>Every vine is a tree.</i>	} These can never be both true together, but they may be both false.
E <i>No vine is a tree.</i>	

If two particular propositions differ in quality, what are they called ?

Sub-contraries ; as,

I <i>Some vine is a tree.</i>	} These may be both true together, but they can never be both false.
O <i>Some vine is not a tree.</i>	

N. B. The above propositions are said to be *opposite*.

What are those propositions either particular

ticular or universal called, that agree in quality, but not in quantity ?

Subaltern; as,

A Every vine is a tree.

I Some vine is a tree.

Or thus,

E No vine is a tree.

O Some vine is not a tree.

What is meant by *conversion* of *propositions* ?

When the subject and predicate change their places with the preservation of truth.

Illustrate this ?

No spirit is an animal ; may be converted into, No animal is a spirit.

Some tree is a vine ; may be converted into,

into, *Some vine is a tree. Every vine is a tree bearing grapes*; may be converted into, *Every tree bearing grapes is a vine.*

S E C T. III.

How are propositions divided according to their *predicate*?

Into *pure* and *modal*.

What is a *pure Proposition*?

That which merely expresses that the predicate is connected with the subject. As, *Every true christian is an honest man.*

What is a *modal Proposition*?

That which includes the *way* and *manner* wherein the predicate is connected with the subject. As, *it is necessary that a true christian should be a good man.*†

D 3

Suppose

† Logical Writers often make the *modality* of this proposition to belong to the *copula*, because it shews the *manner* of the connection between the subject and the predicate.

Suppose the sentence to run thus:
*That a true christian should be an honest
 man is a necessary thing.*

How is it to be considered as a *logical*
 proposition?

The mode as the predicate, and the
 whole *primary* proposition included in the
 subject of the *modal* proposition.

How many *modes* are there of connec-
 ting the predicate with the subject?

Four, namely, *necessity*, and its oppo-
 site *contingency*: *Possibility*, and its oppo-
 site *impossibility*.

Illustrate these?

*It is necessary that a globe should be round:
 That a globe be made of wood or glass is
 an unnecessary or contingent thing.*

It

It is impossible that a globe should be square: It is possible that a globe may be made of water, soap, and air. †

S E C T. IV.

How are propositions divided according to their nature?

Into *single* and *compound*.

What is a *single Proposition*?

That which has but one subject and one predicate.

D 4

Is

† There are *moral* and *civil* modes of connecting two ideas together, namely, *lawfulness* or *unlawfulness*: *Conveniency* and *inconveniency*. &c. And several other *modes*, such as, *it is certain*, *it is doubtful*, *it is said by the ancients*, *it is written*, *it is agreed*, *it is granted*, &c. &c.

Is there any division of a *single proposition* ? *

Yes. Into *simple* and *complex*.

What is a *simple proposition* ?

That whose subject and predicate have single terms : As, *Virtue is desirable. No man is innocent.*

What is a *complex proposition* ?

That whose subject or predicate, or both are made up of complex terms. As, *Every sincere penitent is pardoned ; No man alive is perfectly innocent.*

What is a *compound proposition* ?

That which is made up of two or more subjects or predicates, or both ; and it contains in it two or more propositions which are either *plainly expressed*,
or

* A *single proposition* is also called *categorical*.

or concealed and implied.

How are those *compound propositions* whose composition is *expressed* and *evident* divided?

Into six kinds; namely,

1st. *Copulative propositions*; as, *Riches and honour are temptations to pride.*

2d. *Disjunctive propositions*; as, *The colour is either white or black.*

3d. *Conditional or hypothetical propositions*; as, *If the sun be fixed the earth must move.*

4th. *Casual propositions*; as, *Reboam was unhappy, because he followed evil counsel.*

5th. *Relative propositions*; as, *When you are silent, I will speak.*

6th. *Discretive propositions*; as, *Job was*

was patient, though his grief was great.

How are those compound propositions divided whose composition is *not expressed*, but *latent*, or *concealed*?

Into five kinds ; namely,

1. *Exclusives* ; as, *The pious man alone is happy.*

2. *Exceptives* ; as, *The Protestants worship none but GOD.*

3. *Comparatives* ; as, *Pain is the greatest affliction.*

4. *Inceptives* or *desitives* ; as, *The Latin language is not yet forgotten.*

5. *Continuatives* ; as, *Rome remains to this day.*

S E C T. V.

How are propositions divided according to their *sense* or *signification*?

Into

Into *true* and *false*.

What is a true proposition?

That which joins those ideas and terms together, whose objects are joined and agree; or which disjoins those ideas and terms, whose objects disagree, or are disjoined.

Illustrate this?

Every bird has wings: A brute is not immortal.

What is a *false* proposition?

That which joins those ideas or terms, whose objects disagree; or which disjoins those whose objects agree.

Illustrate this?

Brutes are immortal: Birds have no wings. †

S E C T.

† Note. It is impossible that the same thing should

S E C T. VI.

How are propositions divided according to their *different degrees of evidence*?

Into *certain* and *dubious*.

What is a *certain proposition*?

That whose *evidence* of the agreement or disagreement of the ideas is so strong and plain, that we cannot refuse assenting to it.

Give Examples?

Every

should be, and not be; that the same thing should agree, and not agree, at the same time, and in the same respect. This is a first PRINCIPLE of HUMAN KNOWLEDGE.—Some propositions may seem to contradict one another, tho' they may be both true, but in different senses, or respects, or times.

*Every circle has a center. The world did not create itself. **

What is a *dubious, doubtful, or uncertain proposition*?

That which has some obscurity upon the agreement or disagreement of the ideas, so that the mind does not clearly perceive it, and is not compelled to assent or dissent.

Give Examples?

The planets are inhabited. The world will not stand a thousand years longer. Dido built Carthage. ††

Note.

* An assent to such propositions, is honoured with the name of KNOWLEDGE.

†† Such *uncertain* propositions are called OPINIONS.

Note. You are referred to Dr. WATIS's LOGIC for the *evidence of sense, consciousness, intelligence, reason, faith, and inspiration*: For the *springs of false judgment, or the doctrine of prejudices*: And for *general directions to assist us in judging aright*.





C H A P. VIII.

WHAT is a *Syllogism*?

A sentence or argument, composed of three propositions; so disposed, as that the last is necessarily inferred from those which go before. †

How many things *may be considered* in the constitution of a *syllogism*?

Two. Viz. The *matter*, and the *form* of it.

What is the *matter* of which the *syllogism* is made up.

Three

† Note. There are several kinds of *syllogisms*, with particular rules relating to them.

Three propositions; and these are made up of *three ideas*, or *terms*, variously joined.

What are the *three propositions* said to be?

The *proxime* or *immediate matter*, of a syllogism.

How are the *three propositions* named?

The two distinct parts of the questions are called the *premises*, the third which is drawn from these, the *conclusion* or *consequence*.

How are the *premises* separately called?

The *major* and the *minor*. ††

What

†† Note. The *major* proposition is generally placed first, the *minor* second, and the *conclusion* last; where the syllogism is regularly composed and represented.

What are the *three terms* said to be?

The *remote matter* of a syllogism.

How are the *three terms* named?

The *major*, the *minor*, and the *middle*.

Illustrate this?

Thus $A \equiv C$. The *major* proposition.

And $A \equiv B$. The *minor* proposition.

Therefore $B \equiv C$. The *conclusion*.

What is the predicate of the *conclusion* called?

The *major term* : As C.

What is the subject of the *conclusion* called?

The *minor term* : As B. •

Which is the *middle term* of this syllogism?

A. **
E

Why

• Note. The *major* and *minor terms* are called the extremes. — ** The *middle term* is sometimes called the *argument*.

Why is this called the *middle term* or *medium* ?

Because it is the *third* idea invented, and for its often having a greater extent of meaning than the subject, and less than the predicate: It also shows the connection between the *major* and *minor term* in the *conclusion*.

Of what is the *major* proposition composed ?

Of the predicate of the conclusion, and the middle term.

Of what is the *minor* proposition composed ?

Of the subject of the conclusion, and the middle term. This is sometimes called the *assumption*.

Illustrate this, by the question *whether GOD must be worshipped* ?

Seek a *third idea* whose character will agree

agree to GOD: Viz. that of a *Creator*;
and it will be,

Thus, *Our Creator must be worshipped.*

And, *Our Creator is GOD.*

Therefore *GOD must be worshipped.*

In this example the conclusion is *affirmative*. †

Give examples of a *negative* conclusion?

If A does not \equiv C. Or $A - C$.

And if $A \equiv B$. And $A \equiv B$.

Then B does not \equiv C. * Then $B - C$.

E 2

Again

† The foundation of all affirmative conclusions is laid in this general truth, that so far as two proposed ideas agree to any third idea, they agree also among themselves.

* Note. This exact distinction of the several parts

Again from the ideas of *sinners* and *angels*. Seek an idea whose character will not agree to both; viz. that of being *happy*. Then,

Happy are no sinners.

Happy are all angels.

Then, *angels are not sinners.* **

What is the *form of a syllogism?*

The framing and disposing of the premises according to art, or just principles of reasoning, and the regular inference of the conclusion from them.

C H A P.

parts of a *syllogism*, and of the *major* and *minor terms*, connected with the *middle term* in the *major* and *minor* propositions, does chiefly belong to SIMPLE or CATEGORICAL SYLLOGISMS. Yet all *syllogisms* whatever have something analogical to it.

** The foundation of all negative conclusions is this, that where one of the two proposed ideas agrees with the third idea, and the other disagrees with it, they must so far disagree with each other.



CHAP. IX.

HOW are *sylogisms* divided ?

Into various kinds. 1st. According to the *question* which is proved by them.

2d. According to the *nature* and *composition* of them.

And 3d. According to the *middle term*, which is used to prove the question.

SECT. I.

How are *sylogisms* divided according to the *question* which is to be proved ?

E 3

Into

Into *universal affirmative, universal negative; particular affirmative, and particular negative.* †

What is an *universal affirmative syllogism*?

That which has one idea proved universally to agree with another, and may be universally affirmed of it.

As, Every sin deserves death.

And, Every unlawful wish is a sin.

Therefore, Every unlawful wish deserves death.

What is an *universal negative syllogism*?

That

† This is often called a division of syllogisms drawn from the *conclusion*; for so many sorts of conclusions there may be, which are markt with the letters, A, E, I, O. As the four conclusions of the examples in this section are, 1st. A, 2d. E, 3d. I, and the 4th. O.

That which has one idea proved to disagree with another idea universally, and may be thus denied of it,

As, *No injustice can be pleasing to GOD.*

And, *All persecution for the sake of conscience is injustice.*

Therefore, *No persecution for conscience sake can be pleasing to GOD.*

What is a *particular affirmative syllogism*?

That which has one idea proved to agree with another idea particularly,

As, *Whoever speaks well of every one has many friends.*

And, *Some men speak well of every one.*

Therefore, *Some men have many friends.*

What is a *particular negative syllogism*?

That which has one idea proved to disagree with another idea particularly,

As, None who indulge their passions love virtue.

And, Some indulge their passions.

Therefore, Some men love not virtue.

S E C T.

Note 1. The general principle upon which these universal and particular syllogisms are founded, is this, whatever is affirmed or denied universally of any idea, may be affirmed or denied of all the particular kinds or Beings, which are contained in the extension of that universal idea. Thus the *desert of death* is affirmed universally of *sin*, and an *unlawful wish* is one particular kind of *sin*, therefore the *desert of death* may be affirmed concerning any *unlawful wish*. &c.

2d. In the doctrine of syllogisms, a *singular* and an *indefinite* proposition are ranked among *universals* and *particulars*, as in the doctrine of propositions. Page 43.

S E C T. II.

How are fyllogifms divided according to the *nature* and *composition* of them ?

Into *single* and *compound*.

How is a *single fyllogifm* composed ?

Of three propositions.

How is a *compound fyllogifm* composed ?

Of more than three propositions, and may be formed into two or more tyllogifms.

How may *single fyllogifms* be divided ?

Into *simple*, *complex*, and *conjunctive*. †

What

† As ideas and propositions are divided into *single* and *compound*, and *single* subdivided into *simple* and *complex*; so there are the same divisions and subdivisions applied to fyllogifms.

What is a *simple* or *categorical syllogism* ?

That which is made up of three *plain, single, or categorical propositions*; and has its middle term with one part of the question in the major proposition, and with the other in the minor; from whence there follows a plain single conclusion: *As, every human virtue is to be sought with diligence; Prudence is a human virtue: Therefore prudence is to be sought diligently.*

How

Note. Tho' the terms of propositions may be *complex*; yet where the composition of the whole argument is thus *plain, simple, and regular*; it is properly called a *simple syllogism*: since the *complexion* does not belong to the *syllogistic form* of it.

General AXIOMS.

1st. *Particular propositions* are contained in *universals*, and may be inferred from them; but *universals* are not contained in *particulars*.

2d. In all *universal propositions*, the subject is *universal*: In all *particular propositions*, the subject is *particular*.

3d.

How many ways are there of disposing the *premises* or order of the *middle term* in a *simple syllogism*?

Three. And they are called *figures*.

What

3d. In all *affirmative propositions*, the *predicate* has no greater extension than the *subject*.

4th. The *predicate* of a *negative proposition* is always taken *universally*, for in its whole extension it is denied of the *subject*. For if it be said, *No stone is vegetable*, all sorts of *vegetation* is denied concerning *stones*.

The rules of *simple, regular syllogisms*.

1st. The *middle term* must not be taken twice *particular*, but once at least *universally*.

2d. The *terms* in the *conclusion* must never be taken more *universally* than they are in the *premises*.

3d. A *negative conclusion* cannot be proved by two *affirmative premises*.

4th. If one of the *premises* be *negative*, the *conclusion* must be *negative*.

5th. If either of the *premises* be *particular*, the *conclusion* must be *particular*.

6th. From two *negative premises* nothing can be concluded.

7th. From two *particular premises* nothing can be concluded.

What is the *first figure*?

When the *middle term* is the subject of the *major*, and predicate of the *minor proposition*.

Thus $A \supset C$;
And $B \supset A$;
Therefore $B \supset C$.

What is the *second figure*?

When the *middle term* is the predicate of both the *premises*.

Thus $C \supset A$;
And $B \supset A$;
Therefore $B \supset C$.

What is the *third figure*?

When the *middle term* is the subject of both the *premises*.

Thus $A \supset C$;
And $A \supset B$;
Therefore $B \supset C$. ††

What

†† Note. Some Logicians add the following, and call it the fourth figure. Viz. When the *middle*

What is the *special rule* of the first figure?

The major proposition must be universal, and the minor affirmative;

As, *All idle pupils are very foolish;*

All truant-players are idle pupils:

Therefore, *All truant-players are very foolish.* †

What

middle term is the predicate of the *major*, and subject of the *minor*.

As $C \equiv A;$

And $A \equiv B:$

Then $B \equiv C.$

This *figure* draws its *conclusion* in a very indirect and oblique manner, and is seldom used in the *sciences*.

† Note. 1st. A *mood* is the regular determination of propositions according to their *quantity* and *quality* (See Note at p. 42 and 45) which are signified by certain artificial words, wherein the consonants

What is the *special rule* of the second figure?

The major proposition must be universal; and one of the premises, and the conclusion particular;

As, No liar is fit to be believed;

Every good christian is fit to be believed:

Therefore, No good christian is a liar.

What is the *special rule* of the third figure?

The

sonants are neglected, and the four vowels, A, E, I, O, only regarded. The first figure has four moods, *bArbArA*, *cElArEnt*, *dArII*, *fErIO*.

The second figure has four moods, *cEsArE*, *cAmEstrEs*, *fEßInO*, *bArOcO*. The third figure has six moods, *dArAptI*, *fElAptOn*, *dIßAmIs*, *dAtI/I*, *bOcArdO*, *fErIßOn*.

These moods are comprized in the following Latin verses.

Barbara,

The minor proposition must be affirmative, and the conclusion particular;

As, Whoever loves GOD shall be saved;

All lovers of GOD have imperfections:

Therefore, Some who have imperfections shall be saved.

Or; As No fool has a regard to futurity;

Some fools are rich:

Therefore,

Barbara, celarent, darii, ferio, quoque primæ;

Cesare, camestres, festino, baroco, secundæ.

Tertia darapti sibi vindicat, atque felapton,

Adjungens disamis, datisi, bocardo, ferison.

Logicians say, the fourth figure is a mere inversion of the first; yet, they have given it these moods, namely, *bArbArI*, *cAlEntEs*, *fEspAmO*, *frE/I/On*.

Note 2. To determine in each mood, the *quantity* and *quality*; remember both premises cannot be *particular*, or both *negative*; therefore in every syllogism one of the premises must be *universal*, and one *affirmative*.

Therefore, *Some who are rich have no regard to futurity.*

What is a *complex syllogism*?

That, in which the middle term is not connected with the whole subject, or the whole predicate in two distinct propositions, but is intermingled and compared with them by parts, or in a more confused manner, in different forms of speech.

Give an Example?

*The sun is a senseless Being; The Persians worshipped the sun: Therefore, The Persians worshipped a senseless Being.**

How may *complex syllogisms* be divided?

Into so great a variety they cannot be reduced under *particular titles*; because
the

* Here the predicate of the conclusion is *worshipped a senseless Being*, part of which is joined with the middle term *sun* in the *major proposition*; and the other part in the *minor*.

the forms of human language are so exceedingly various.

Give examples of a few that can be distinguished by their propositions?

1st. By *exclusive* propositions: As, *Pious men are the only favourites of Heaven; True christians are favourites of Heaven: Therefore, True christians are pious men.*

Again, *Pious men are the only favourites of Heaven; Hypocrites are not pious men: Therefore, Hypocrites are not favourites of Heaven.*

2d. By *exceptive* propositions: As, *None but physicians came to the consultation; The nurse is no physician: Therefore, The nurse came not to the consultation.*

3d. By *comparative* propositions: As, *A dove will fly a mile in a minute; A swallow flies swifter than a dove: Therefore, A swallow will fly more than a mile in a minute.*

4th. By *inceptive* and *desitive* propositions: As, *The fogs vanish as the sun*
F
rises;

*rises ; But the fogs have not yet begun to
vanish : Therefore, The sun is not risen.*

5th. By *modal* propositions : As, *It
is necessary that a General should understand
the art of war ; But Timothy does not un-
derstand the art of war : Therefore, Ti-
mothy should not be a General. †*

What is a conjunctive syllogism ?

That wherein one of the *premises* has
distinct parts joined by a *conjunction* or a
particle of speech : And are divided into
four kinds, viz.

1st. *Conditional, or hypothetical.*

2d. *Disjunctive.* 3d. *Relative.* 4th.
Connexive.

Give

† It is of little moment to what *species* any of
the syllogisms belong ; for it is not any formal set
of rules, so much as the evidence, and force of
reason, that must determine the truth or falsehood
of all such syllogisms.

Give examples of each ?

1st.

If, A is, B is also ;

But, A is :

Therefore, B is also.

Again, *If there be a GOD, the world is governed by providence ; But, There is a GOD : Therefore, The world is governed by providence.*

2d.

Either A is, or B is ;

But, A is not :

Therefore, B is.

Again, *The earth moves in a circle, or in an ellipsis ; But, It does not move in a circle : Therefore, It moves in an ellipsis.*

3d.

As 2 . . 4 :: 3 . . 6 ;

But, 2 is $\frac{1}{2}$ of 4 .

Therefore, 3 is the $\frac{1}{2}$ of 6.

Again, *As is the captain, so are his soldiers*; But, *The captain is a coward*: Therefore, *His soldiers are cowards also*.

4th.

Genius must join with study to make a scholar; *Peter has genius, but he cannot study*: Therefore, *Peter will never be a scholar*. †

What is a *compound syllogism*?

That which is made up of two or more *simple syllogisms*, and may be resolved into them. The chief kinds are *epichirema*, *dilemma*, *prosyllogismus*, *sorites*, and *induction*.

What is an *epichirema syllogism*?

That which contains the proof of the *major* or *minor*, or both, before it draws the

† Most *conjunctive syllogisms* may be transformed to *categorical*, or converted into each other by changing the forms of speech.

the conclusion. As for example.

Sickness may be good for us, for it weans us from the pleasures of life, and makes us think of dying;

But we are uneasy under sickness, which appears by our impatience, complaints, groanings, &c.

Therefore, We are uneasy sometimes under that which is good for us.

What is a Dilemma?

A *syllogism* that in its argument divides the whole into all its parts or members, by a *disjunctive* proposition, and then infers something concerning each part which is finally inferred concerning the whole.

As for example,

In this life we must either obey our vicious inclinations, or resist them;

*To obey them, will bring sin and sorrow;
to resist them, is laborious and painful:*

F 3

Therefore,

Therefore, *We cannot be perfectly free from sorrow or pain in this life.* †

What is a *prosyllogism*?

When two or more syllogisms are so connected together, that the conclusion of the former is the major or the minor of the following:

As

† A *Dilemma* sometimes becomes faulty, or ineffectual: As for example. *Euatblus* promised *Protagoras* a reward when he had taught him the art of pleading, and it was to be paid the first Day he gained any cause in the Court. After a considerable time *Protagoras* goes to Law with *Euatblus* for the reward, and uses this *Dilemma*: *Either the cause will go on my side, or on yours; If the cause goes on my side, you must pay me according to the sentence of the Judge; If the cause goes on your side, you must pay me according to your bargain: Therefore, Whether the cause goes for me or against me, you must pay me the reward.* — But *Euatblus* retorted the *Dilemma* thus: *Either I shall gain the cause or lose it; If I gain the cause, then nothing will be due to you according to the sentence of the Judge; But, If I lose the cause, nothing will be due to you according to my bargain: Therefore, Whether I lose or gain the cause, I will not pay you, for nothing will be due to you.*

As for example,

Blood cannot think ; but the soul of man thinks : Therefore, The soul of man is not blood : But, The soul of a brute is his blood, according to the Scripture : Therefore, The soul of man is different from the soul of a brute.

What is a *Sorites* ?

That whose several middle terms are chosen to connect one another successively in several propositions, till the last proposition connects its predicate with the first subject.

As for example,

All men of revenge have their souls often uneasy ; uneasy souls are a plague to themselves ; now to be one's own plague is a folly to the extreme : Therefore, All men of revenge are extreme fools.

What is an *induction* ?

When from several particular propositions one general is inferred ; it is then

said to be an *induction*. As, *The doctrine of the SOCINIANS cannot be proved from the Gospel, it cannot be proved from the Acts of the Apostles, it cannot be proved from the ~~the~~ Epistles, nor from the book of Revelations: Therefore, it cannot be proved from the New Testament.* †

S E C T. III.

How are syllogisms divided according to the *middle term*?

In thus treating syllogisms, the *middle term* is called the *argument*, and the *arguments* are thus distributed.

1st.

† There is an imperfect *syllogism*, called an *Euthymeme*, because only the conclusion with one of the premises is expressed, while the other is supposed, and reserved in the mind: Thus, *There is no true religion without good morals: Therefore, A knave cannot be truly religious.* Or thus, *It is our duty to love our neighbours, as ourselves: Therefore, There are but few who perform their duty.*

1st. They are called *grammatical, logical, metaphysical, moral, mechanical, theological, &c.* according to the art, science, or subject, whence the *middle term* or *topic** is borrowed.

Illustrate this?

To prove that, *No man should steal from his neighbours*, because the *Scripture* forbids it, is a *theological argument*: To prove it from the laws of the land, is *political*: But to prove it from the principles of *reason* and *equity*, the argument is *moral*.

2d.

* The topics of *Grammar*, are *noun, verb, etymology, &c.* The topics of *Logic*, are *genus, species, difference, property, &c.* The topics of *Antology* or *Metaphysics*, are *cause, effect, action, passion, identity, opposition, subject, sign, &c.* The topics of *Morality* or *Ethics*, are *law, sin, duty, authority, freedom of will, reward, punishment, &c.* The topics of *Theology*, are *GOD, CHRIST, faith, hope, worship, salvation, &c.*

There belong to *topics* particular *observations, axioms, canons* or *rules*; which are laid down in each particular *science*.

2d. Arguments are either *certain and evident*, or *doubtful and merely probable*.

What are *doubtful or probable arguments*?

Those whose conclusions are proved by some probable medium. As, *This plane was once a church-yard, or a field of battle; because there are many human bones found here.*

What are *certain and evident arguments*?

Those whose conclusions are proved by clear mediums, and undoubted principles, called *demonstrations*; and are divided into two sorts.

What are the first sort called?

Demonstrations *à priori*, because they prove the effect by its necessary cause, and also show the cause of existence.

Give an Example?

The Scripture is infallibly true; because
it

It is the word of GOD which cannot lie.

What are the second sort called?

Demonstrations *à posteriori*, for they infer the cause from its necessary effect, and prove only the existence of a thing.

Give Examples?

I infer there hath been the hand of some artificer here, because I find a curious engine.

Again, I infer there is a GOD, from the works of his wisdom in the visible world.

3d. Arguments are divided into *artificial* and *inartificial*.

What are *artificial* arguments?

Such as are taken from the nature and circumstances of the things: As, *The world was created by GOD, because nothing can create itself.*

What are *inartificial* arguments?

Such

Such as are taken on the testimony of some person ; As, *Peter says to-morrow will be a holiday, and he and Tom with others, are to play a cricket-match on the green ; therefore, I conclude, it will be a holiday for Jack and me, and all the school.*

4th. Arguments are either *direct* or *indirect*. *

What is a *direct* argument ?

That, whose middle term proves the question itself.

What

* Note. There is another rank of arguments with *Latin* names ; derived from the *topics* or *middle terms*.

1. *Argumentum ad judicium*, when addressed to the reason of mankind.

2. *Argumentum ad fidem*, when addressed to our faith.

3. *Argumentum ad ignorantiam*, when addressed to our ignorance.

4. *Argumentum ad hominem*, when addressed to our professed principles.

5. *Argumentum ad verecundiam*, when addressed to

What is an *indirect* or *oblique* argument?

That which proves or refutes some other proposition, and makes the conclusion appear to be true by plain consequence. †

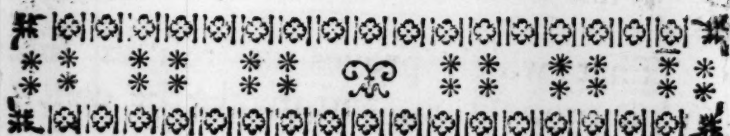
CHAP.

to our modesty.

6. *Argumentum ad passiones*, when addressed to the passions.

7. *Argumentum ad populum*, when it is an appeal to the people.

† Note. An argument is called *uniform*, when both the premises are derived from the same spring of knowledge, whether it be *sense*, *reason*, *human faith*, or *divine faith*: But when they are derived from different springs of knowledge, it is called a *mixt argument*. Note also. If a syllogism agrees with the preceding rules, it is called a *true argument*: If it agrees not with them, it is a *paralogism*, or *false argument*: And when a *false argument* has the appearance of a true one, it is called a *sophism*, or *fallacy*. Note. When some absurdity is interred, it is called *reductio ab absurdum*: There are two other arguments, one called *ex minus probabili ad magis*, the other *ex concessio*.



CHAP. X.

HOW many kinds of *sophisms* do Logicians generally treat of?

Eight.

What is the first called?

Ignorati elenchi, or a mistake of the question.

Give an illustration from this question, whether excess of wine can be hurtful to him who drinks it?

The *Sophister* may argue, *Wine revives the spirits, gives a man courage, and makes him strong and active*. Therefore, *Wine does no hurt to him who drinks it, but good;*
as

as it makes him *sprightly, courageous, &c.*

The reply, *Excess of wine inebriates the intellectual faculties of man, to the degree of his committing any sin that may offer itself: It also inflames the blood, and produces many disorders in the body: Therefore, Wine is hurtful to the soul and body of him who drinks it to excess, tho' it may do good to him who drinks it with moderation.*

What is the second *sophism* called?

Petitio principii, or a *supposition of what is not granted.*

Exemplify this?

The Papist says, *His religion is the only catholic religion; and is derived from CHRIST and his APOSTLES: Because it agrees with the doctrine of the Fathers of the church, and all the holy Martyrs.* The Protestant says, this *agreement* is the great point in the contest, by which the *syllogism*

gism becomes a *petitio principii sophism*.

What is the third *sophism* called?

A circle. As, The Papists prove the Scripture to be the word of GOD, by the authority or infallible testimony of their church: And then pretend to prove the infallible authority of their church by the Scripture.

What is the fourth *sophism* called?

Non causa pro causa, or the assignation of a false cause. Such as Astrologers telling fortunes, &c. by the various aspects of the stars and planets. And of drawing conclusions from calamities, actions, &c.

What is the fifth *sophism* called?

Fallacia accidentis, when we pronounce concerning the nature and essential properties of any subject according to something merely accidental to it. Thus wine has accidentally occasioned drunkenness and quarrels; Learning and printing have accidentally

cidentally caused *sedition* in a state; and for these reasons have been pronounced *evil things*. But how unreasonable are these *inferences*!

What is the sixth *sophism* called?

A dicto secundum quid ad dictum simpliciter, when we argue from that which is true in *particular circumstances*, to prove the same thing true *absolutely, simply, and abstracted from all circumstances*: As, *That which is bought in the shambles is eaten for dinner; raw meat is bought in the shambles: Therefore, raw meat is eaten for dinner.* This *sophism* has its reverse. Thus, A criminal may argue; *The sixth commandment says, thou shalt not kill; If you hang me you certainly do kill: Therefore, you ought not to hang me.*

What is the seventh *sophism* called?

Composition and division, when we infer any thing concerning ideas in a *compounded sense*, which is only true in a *divided sense*, and the reverse. As, The Scripture says, *The worst of sinners may be saved:*
 G It

It signifies they may *repent* and be *saved*; not that they shall be saved in their sins. Again the *sophism* of *division*: As, *Five is one number: Two and three are five: Therefore, Two and three are one number.*

What is the eighth *sophism* called?

The *sophism* of *equivocation*, when the words or phrases are *plainly equivocal*. As *He that sends forth a book into the light, desires it to be read; He that throws a book into the fire, sends it into the light: Therefore, He that throws a book into the fire, desires it to be read.*

How many *general methods* are there to prove the truth or falsehood of all *sylogisms*?

Two.

What is the first?

One of the *premises* must contain the *conclusion*, and the other must show that the *conclusion* is contained in it.

Illustrate

Illustrate this ?

Whosoever is a slave to his natural inclinations, is miserable ; The wicked man is a slave to his natural inclinations : Therefore, The wicked man is miserable †

Again, Every wise man masters his passions ; But, No angry man masters his passions: Therefore, No angry man is wise. ††

What is the second general method ?

As the *terms* in every *sylogism* are usually repeated twice, so they must be

G 2

taken

† Here, the major proposition contains the *conclusion* ; for under the general character of a *slave to natural inclinations*, a *wicked man* is contained or included ; and the minor proposition declares it : whence the *conclusion* is evidently deduced, that *The wicked man is miserable*.

†† In this *sylogism*, the minor is the *contained proposition* ; as it denies *wisdom* concerning an *angry man*, because *mastering the passions* is concluded in *wisdom*, and the major shows it.

taken precisely in the same sense in both places.

Illustrate this, in a syllogism?

*What I am, thou art ; And, I am a man : Therefore, Thou art a man. **

Exemplify this in a Sophism?

*It is a sin to kill a man ; A murderer is a man : Therefore, It is a sin to kill a murderer. ***

C H A P.

* In this syllogism, *What I am* is taken specially for *my nature*, in both the major and the minor proposition ; therefore the conclusion is just.

** In this sophism, the word *kill* in the major proposition signifies to *kill unjustly*, or *without law* ; in the conclusion it is taken for *putting a man to death in general*, therefore the inference is not good.



CH A P. XI.

WHAT is METHOD?

In a logical sense, it is the *disposition* of a variety of thoughts, in such order as may best serve to find out unknown truths; to explain, and confirm truths that are known; or to fix them in the memory.

How is *method* divided by Logicians?

Into *natural* and *arbitrary*; and *natural* is divided into *synthetic*, *analytic*, and *mixed*.

Which is the *synthetic method*?

That which begins with the parts, and leads on to the knowledge of the whole:
It

It begins with the most simple principles, and general truths, and proceeds by degrees to that which is drawn from them, or compounded of them: And is called the *method of composition*.

Which is the *analytic method*?

That which takes the whole compound as it finds it, and leads to the knowledge of it by resolving it into it's first principles, or parts: And is called the *method of resolution*.

What is the particular use of each?

The *synthetic* is used in teaching the *sciences*, after they are invented; and the *analytic* in finding things unknown. †

Illustrate

† Note, both methods are often employed to find out truth, and to communicate truth to others, as well as the *mixed*, which is composed of both *synthetic* and *analytic*.

Illustrate the *synthetic method*, in proving the sum of the three angles of every *plane* triangle, is equal to 180 degrees ?

A mathematical point, is supposed to have no dimensions, and is only an *assignable place in a plane*.

A plane, is a *surface* perfectly flat between its limits.

A line, is a *magnitude* with length only, and its *limits* are *points*.

A right line, is the nearest distance between two points in a plane : *A curved line* is circular, and not the nearest distance. *Parallel lines* in a plane can never meet. *A plane angle*, is formed by two inclining right lines in the same plane, meeting at a point, called the *angular point*.

A circle, is a plane figure bounded by an uniformly curved line, called the *circumference*, which is every where equidistant

tant from a point within it, called its *centre*.

The circumference of every circle is supposed to be divided into 360 equal parts called degrees.

A plane angle, is measured by an arc of a circle; the angular point being its centre.

*A right line drawn from one part of the circumference, thro' the centre, to another part of the circumference, is called a diameter; and it divides the circumference into two equal parts, called *semi-circles*, each equal to 180 degrees.*

*A right line drawn from the centre of a circle to its circumference, is called *radius*.*

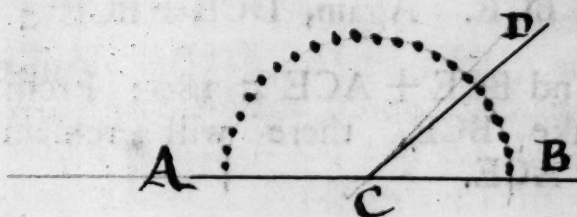
LEMMA I.

DC

If a right line AB , stands on another right line CD ,† it forms two angles, whose sum will be 180 degrees.

AB

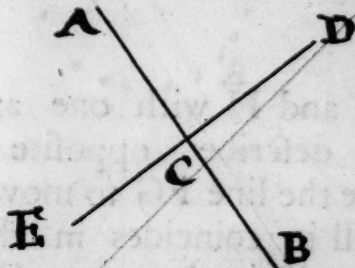
† One and the same plane, is to be understood to the end of this illustration.



On C describe a femicircle. Then the arc AD will be the measure of the angle ACD, and the arc BD the measure of the angle BCD: Now the arc AD + arc DB = femicircle = 180 degrees.

LEMMA II.

If a right line DE, crosseth another right line AB, the opposite angles will be equal.



For the angle ACD + DCB = 180°;

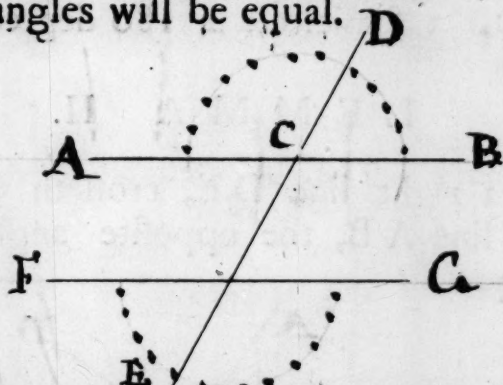
And the angle DCB + BCE = 180°:

From

From each take DCB , there will remain
 $ACD = BCE$. Again, $DCB + BCE =$
 180° ; And $BCE + ACE = 180^\circ$: From
each take BCE , there will remain
 $DCB = ACE$.

LEMMA III.

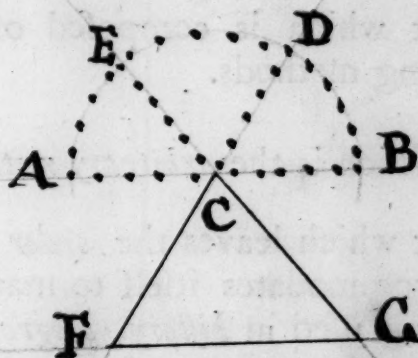
If a right line DE crosseth two parallel lines AB , FG the alternate, and opposite angles will be equal.



On C and H with one and the same radius, describe opposite semicircles. Conceive the line FG to move on the line DE , 'till it coincides in the line AB , the centre H in the centre C ; then will the two semicircles become a circle.

Therefore

Therefore the angles ACD , FHD , BCE , GHE , are equal: And the angles BCD , GHD , ACE , FHE , are equal. By which (in the following diagram) the angle $ACE = G$, and $ECD = FCG$, and $BCD = F$: Now the angles ACE , ECD , $DCB =$ a semicircle $= 180$ degrees; consequently the sum of the angles, viz. F , FCG , and G , of the triangle $FCG = 180$ degrees.



Illustrate the *analytic method*, in resolving what are the two numbers, whose sum is 20, and difference 4?

Let $X =$ the lesser number.

Then $X + 4 =$ greater number.

And $2X + 4 = 20$. Their sum.

Now

Now $2 X = 20 - 4.$

And $X = \frac{20-4.}{2} = 8$, the lesser number.

Whence $X + 4 = 12$, the greater number.*

Which is the *mixed method*?

That which is composed of the two preceding methods.

Which is the *arbitrary method*?

That which leaves the *order of nature*, and accommodates itself to many purposes. It is used in *history, biography, chronology, poesy, oratory.* &c.

What are the general requisites of true method?

That

* Note. It is very difficult, always to maintain the precise distinction between these two methods.

That it be *safe*. *Plain* and *easy*. *Distinct*. *Full*, or without *defect*. *Short*, or without *superfluity*. *Proper* to the *subject*, and the *design*. *Connected*: And that the *parts* agree.

F I N I S.

E R R A T U M.

Page 48, last line, for

○ *No vine is a tree.* Read ○ *some vine is not a tree.*



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Page 40. 1st Edition.
Of the history of the British Museum.
1753.